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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,842	08/22/2002	Craig E. Burch	201-1581	3123

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EXAMINER

ESHETE, ZELALEM

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/064,842	Applicant(s) BURCH ET AL.	
	Examiner Zelalem Eshete	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the amendment filed on 10/15/2004.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3,5,8,13-16,21-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Hampton et al. (5,682,848) in view of Wagner et al. (4,823,747).

Regarding claims 1,8,13,23: Hampton discloses a method of assembly and an internal combustion engine cylinder head camshaft bearing ladder, comprising: a combustion chamber; a head with a passageway fluidly connected with said chamber; a valve controlling fluid communication between said chamber and said passageway (see figure 1); a first body in contact with cylinder head with a cut out for receivingly mounting a cam shaft or a cam shaft rotatably mounted on said head on a side of said camshaft generally opposite said combustion chamber by a camshaft bearing ladder, said ladder having a pocket formed therein(see numeral 15), a rocker arm for actuating said valve, said rocker arm having first and second modes of operation of said valve; and a solenoid actuator for actuating said rocker arm between said first and second modes of

operation (see abstract); said first body also having a pocket; and a solenoid actuator positioned within said pocket (see numeral 16) for activating a switchable rocker arm assembly (see figure 1).

Hampton fails to disclose the threaded connection of said body to a cylinder head and to specifically disclose the solenoid pocket is an integral part of the camshaft bearing.

However, Wagner teaches threaded connection of the body to a cylinder head (see figure 3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hampton's device by using threaded connection as taught by Wagner in order to secure the body on the engine cylinder head. With regard to the lack of the specific disclosure of an integral pocket/bearing cap, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the pocket (solenoid housing) an integral part of the cam bearing in order to hold the solenoid actuator in place, since it has been held that constructing a formerly various elements into an integral structure involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Regarding claims 2,3,14-16,21: Hampton in view of Wagner discloses the claimed invention as recited above except for a plurality of solenoid/camshaft/cutouts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the number of solenoid/camshaft actuation depending on the

number actuated valves in the engine, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 3: Wagner discloses a plurality of cut outs for reception of a plurality of camshafts (see figure 3).

Regarding claim 5: Hampton discloses the solenoid actuator has leads connected with an "integrated circuit board".

Regarding claim 22: Hampton discloses a method of assembling a portion of a solenoid actuator to a dual operational rocker arm assembly (see abstract), comprising: connecting a solenoid (see numeral 16) actuator in a pocket of a camshaft bearing ladder which receivingly mounts a camshaft on a side of said camshaft on a side of said camshaft (see numeral 4) on a side of said camshaft generally opposite a combustion chamber of an internal combustion engine (see figure 1); and positioning said solenoid actuator adjacent said rocker arm assembly (see figure 1).

Hampton fails to disclose connection of the camshaft bearing ladder to a cylinder head.

However, Wagner teaches connection of the camshaft bearing ladder to a cylinder head (see figure 3).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hampton's device by using threaded connection as taught by Wagner in order to secure the body on the engine cylinder head.

3. Claims 4,9,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hampton et al. (5,682,848) in view of Wagner et al. (4,823,747), and further in view of Jahr (6,318,318).

Hampton in view of Wagner discloses the claimed invention except it lacks the specification of the solenoid actuator being encapsulated by a polymeric material or epoxy resin.

However, Jahr discloses a core protected by a polymeric plastic encapsulation (see column 5, lines 19-22).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the solenoid of Hampton in view of Wagner by encapsulating it with a polymeric material as taught by Jahr in order to protect the solenoid. It would also have been obvious to choose epoxy resin for it is a strong material as is known by one having ordinary skill in the art.

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4. Claims 5-7,11,12,17-20,24 rejected under 35 U.S.C. 103(a) as being unpatentable over Hampton et al. (5,682,848) in view of Wagner et al. (4,823,747), and further in view of Yoeda et al. (6,405,693).

Hampton in view of Wagner discloses the claimed invention as recited above and further discloses a control unit or "integrated circuit boards" with leads connected with said solenoid (see numeral 51); a camshaft bearing cap cover penetrated by the connector to allow for electrical connection to said solenoids (see figure 1).

Hampton in view of Wagner fails to disclose "sealably connection" (pass through connector) "integrated/printed circuit board" (encapsulated).

However, Yoeda discloses a control mechanism for controlling valve of internal combustion engine (see figure 4) that shows the use of solenoid (see numerals 30,31) in connection with driving circuit (see numerals 30b,31b) that is controlled by the external output circuit (see numeral 406) of the ECU (see numeral 20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the control unit of Hampton by implementing circuit board technology as taught by Yoeda thereby incorporating associated connections and encapsulations in order to control the solenoid actuator. It also would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the valve actuation arrangement depending on the engine, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Response to Arguments

5. In a similar rejection applicant argues that Hampton fails to disclose a "solenoid positioned within a pocket of the camshaft bearing ladder (first body with cutout for camshaft)". The examiner respectfully disagrees. The solenoid actuator which includes armature (35), stator (27), coil (23), plunger (45), solenoid spring (44) are positioned within a pocket (15). The pocket (15) in the reference is no different than applicant's parts solenoid actuator (220), plunger (224) coils (230), solenoid spring (238) received in a pocket. Moreover, the actuator assembly (16) of Hampton has to be rigidly attached to the camshaft bearing ladder due to the large reaction load which has to be transmitted to the pocket (15) and ultimately to the camshaft bearing ladder.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (703) 306-4239 or 571-272-4860 effective 11/23/2004. The examiner can normally be reached on Monday to Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zelalem Eshete
Examiner
Art Unit 3748

Z


THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700